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## IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant: TSUTOMU YAMADA ET AL. )  
Serial No. 09/748,470 ) Group Art Unit: 2879  
Filed: December 26, 2000 ) Examiner: K. Ramsey  
For: DEPOSITION MASK AND MANUFACTURING )  
METHOD THEREOF, AND )  
ELECTROLUMINESCENCE DISPLAY AND )  
MANUFACTURING METHOD THEREOF )

**PETITION TO WITHDRAW HOLDING OF ABANDONMENT**  
**UNDER 37 C.F.R. § 1.181(a)**

Mail Stop Petition  
Commissioner of Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

Dear Sirs:

In response to the Notice of Abandonment dated January 13, 2004, Applicants submit this Petition to Withdraw Holding of Abandonment under 37 C.F.R. §1.181(a). Consideration and withdrawal of the holding of abandonment are requested.

I hereby certify that this correspondence was deposited with the United States Postal Service as first class mail in an envelope addressed to: Mail Stop <u>Petition</u> , Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450 on	
February 5, 2004 (Date of Deposit)	
Patricia A. Hart (Name of Person Mailing Paper)	
Signature	Date 02/05/04

## REMARKS

In the Notice of Abandonment dated January 13, 2004 the present application is indicated as being abandoned for failure to timely file a proper reply to the Office letter mailed on June 19, 2003.

Applicants submit that a Response with Amendment in reply to the Office letter dated June 19, 2003 was timely filed on December 18, 2003 with Petition for Extension of Time and proper fee, thus the holding of abandonment is improper and may not be maintained. In this regard, Applicants respectfully submit evidencing materials as Attachments 1 and 2.

Attachment 1:

Attached is a copy of the Response with a certification of mailing stating the date of deposit as December 18, 2003 in compliance with 37 CFR 1.8. All the information with regard to the instant application are correctly represented in the cover page of the Response.

Attachment 2:

Attached is a copy of the return postcard with a stamp of the Office showing that the Office has received the Amendment/Response to Office Action, Petition, and fee with regard to the extension of time.

The documentary evidence discussed herein and submitted herewith clearly establishes that Applicants timely filed a Response on December 18, 2003 to the Office letter dated June 19, 2003. Considering that the date of Office's stamp appeared in the return postcard is December 22, 2003, and the mail date of Notice of Abandonment is January 13, 2004, it is assumed that the Notice was issued before the Response was forwarded to the Examiner.

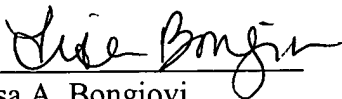
Accordingly, Applicants herein petition to withdrawal the holding of abandonment set forth in the Notice of Abandonment dated January 13, 2004. Pursuant to MPEP § 711.03(c)I, no fee is required for the present Petition. However if there are any charges due with respect to this Petition or otherwise, please charge them to Deposit Account No. 06-1130 maintained by Applicants' attorneys.

For at least the reasons set forth herein above, the holding of Abandonment is improper and may not be maintained; withdrawal thereof and consideration of the Amendment, dated December 18, 2003 is respectfully requested.

The Examiner is invited to contact Applicants' attorneys at the below-listed telephone number regarding this Petition or otherwise concerning the present application.

Respectfully submitted,

CANTOR COLBURN LLP

By: 

Lisa A. Bongiovi  
Registration No. 48,933  
CANTOR COLBURN LLP  
55 Griffin Road South  
Bloomfield, CT 06002  
Telephone (860) 286-2929  
Facsimile (860) 286-0115  
Customer No. 23413

February 5, 2004

# **ATTACHMENT 1**

**COMBINED AMENDMENT & PETITION FOR EXTENSION OF  
TIME UNDER 37 CFR 1.136(a) (Large Entity)**

Docket No.  
YKI-0060

In Re Application Of: **Tsutomu Yamada**

Serial No.  
**09/748,470**

Filing Date  
**December 26, 2000**

Examiner  
**K. Ramsey**

Group Art Unit  
**2879**

Invention: **DEPOSITION MASK AND MANUFACTURING METHOD THEREOF, AND  
ELECTROLUMINESCENCE DISPLAY AND MANUFACTURING METHOD THEREOF**

**TO THE COMMISSIONER FOR PATENTS:**

This is a combined amendment and petition under the provisions of 37 CFR 1.136(a) to extend the period for filing a response to the Office Action of **June 19, 2003** in the above-identified application.  
*Date*

The requested extension is as follows (check time period desired):

☐ One month      ☐ Two months      ☒ Three months      ☐ Four months      ☐ Five months

from: **September 19, 2003**      until: **December 19, 2003**  
*Date*      *Date*

The fee for the amendment and extension of time has been calculated as shown below:

**CLAIMS AS AMENDED**

	CLAIMS REMAINING AFTER AMENDMENT	HIGHEST # PREV. PAID FOR	NUMBER EXTRA CLAIMS PRESENT	RATE	ADDITIONAL FEE
TOTAL CLAIMS	6 -	20 =	0	x \$18.00	\$0.00
INDEP. CLAIMS	2 -	3 =	0	x \$86.00	\$0.00
FEE FOR AMENDMENT					\$0.00
FEE FOR EXTENSION OF TIME					\$950.00
TOTAL FEE FOR AMENDMENT AND EXTENSION OF TIME					950

COMBINED AMENDMENT & PETITION FOR EXTENSION OF  
TIME UNDER 37 CFR 1.136(a) (Large Entity)

Docket No.  
YKI-0060

The fee for the amendment and extension of time is to be paid as follows:

- ☐ A check in the amount of \$950.00 for the amendment and extension of time is enclosed.
- ☒ Please charge Deposit Account No. 06-1130 in the amount of \$950.00
- ☒ The Director is hereby authorized to charge payment of the following fees associated with this communication or credit any overpayment to Deposit Account No.
- ☒ Any additional filing fees required under 37 C.F.R. 1.16.
- ☐ Any patent application processing fees under 37 CFR 1.17.
- ☐ If an additional extension of time is required, please consider this a petition therefor and charge any additional fees which may be required to Deposit Account No.

  
Signature

Dated: December 18, 2003

Lisa A. Bongiovi  
Reg. No. 48,933  
Cantor Colburn LLP  
55 Griffin Road South  
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Telephone (860) 286-2929  
Facsimile (860) 286-0115  
Customer No. 23413

I certify that this document and fee is being deposited  
on 12/18/2003 with the U.S. Postal Service as  
first class mail under 37 C.F.R. 1.8 and is addressed to the  
Commissioner for Patents, P.O. Box 1450, Alexandria, VA  
22313-1450.

  
Signature of Person Mailing Correspondence

Agatha Skierkowski

Typed or Printed Name of Person Mailing Correspondence

CC:

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant: TSUTOMU YAMADA )  
Serial No. 09/748,470 ) Group Art Unit: 2879  
Filed: December 26, 2000 ) Examiner: K. Ramsey  
For: DEPOSITION MASK AND MANUFACTURING )  
METHOD THEREOF, AND )  
ELECTROLUMINESCENCE DISPLAY AND )  
MANUFACTURING METHOD THEREOF )

AMENDMENT

Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

Sir:

In response to the Office Action mailed December 19, 2003, Applicant requests reconsideration in view of the following remarks for entry in the above-identified application.

I hereby certify that this correspondence is being  
Mailed via First Class Mail to the Commissioner for Patents,  
P.O. Box 1450, Alexandria, VA 22313-1450

on December 19, 2003

Agatha Skierkowski

name

Agatha Skierkowski 12/18/03

signature

date

AMENDMENT TO THE CLAIMS:

1-5. (Canceled)

6. (Original) A method for manufacturing a deposition mask, wherein said deposition mask for placing between a depositing material and a medium on which deposition is performed comprises a semiconductor substrate including an opening forming region having a reduced thickness provided with at least one opening for allowing said depositing material to be selectively attached to a desired position on said medium, and a thick portion formed in at least one portion of a mask outer periphery region of said semiconductor substrate,

said method comprising the steps of:

forming a first coating covering a region in which said thick portion of said semiconductor substrate is to be formed;

using said first coating as an etching mask to etch said semiconductor substrate so as to reduce thickness of said semiconductor substrate and thereby form said opening forming region;

forming a second coating in areas other than a predetermined position within said opening forming region; and

using said second coating as an etching mask to etch said semiconductor substrate so as to form said at least one opening in said predetermined position.

7. (Currently Amended) A method for manufacturing a deposition mask as defined in Claim 6, wherein said semiconductor substrate is composed of silicon.

8. (Currently Amended) A method for manufacturing a deposition mask ~~manufacturing method~~ as defined in Claim 6, wherein

said first coating is formed on a first side of said semiconductor substrate;

said opening forming region is formed by etching said first side of said semiconductor substrate to reduce thickness of said substrate;

said second coating is formed on a second side of said semiconductor substrate; and

said at least one opening is formed by etching from said second side until penetrating through said semiconductor substrate.

9-13. (Canceled)



14. (New) A deposition mask to be placed between a material source and a medium which is a deposition target, comprising:

a plurality of opening forming regions having a plurality of openings for allowing a depositing material to be selectively attached to a desired position on said medium; and

a thick portion formed in an area between said plurality of opening forming regions and on an outer periphery region of said mask, wherein

each of said plurality of opening forming regions has a thickness which is less than that of said thick portion.

15. (New) A deposition mask as defined in Claim 14, wherein

said plurality of opening forming regions correspond to a plurality of display panel regions to be formed on said medium.

16. (New) A deposition mask as defined in Claim 14, wherein

said area between said plurality of opening forming regions in which said thick portion is formed corresponds to a gap position between pixels of a display panel to be formed on said medium.

## REMARKS

Claims 1-13 are pending in the application. Claims 1-5 and 9-13 have been canceled, claims 14-16 have been added, and claims 6 and 7 have been amended, leaving claims 6-8 and 14-16 for consideration upon entry of the present amendment. Support for the new claims is found throughout the detailed description of the preferred embodiment. Applicant respectfully requests reconsideration in view of the amendment and remarks submitted herewith.

Claims 1-5 stand rejected under 35 U.S.C. § 102(b) as being anticipated by Staples (U.S. 4,013,502). Because claims 1-5 have been canceled, this rejection is moot.

Claims 1-8 stand rejected under 35 U.S.C. § 102(b) as being anticipated by Mauger (U.S. 4,966,663). "A claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference." *Verdegaal Bros. V. Union Oil Co. of California*, 814 F.2d 628, 631, 2 USPQ2d 1051, 1053 (Fed. Cir. 1987). Moreover, "[t]he identical invention must be shown in as complete detail as is contained in the \* \* \* claim." *Richardson v. Suzuki Motor Co.*, 868 F.2d 1226, 1236, 9 USPQ2d 1913, 1920 (Fed. Cir. 1989).

Claims 6-8 include the following limitation: "forming a first coating covering a region in which said thick portion of said semiconductor substrate is to be formed; using said first coating as an etching mask to etch said semiconductor substrate so as to reduce thickness of said semiconductor substrate and thereby form said opening forming region." Accordingly, these limitations require formation of an opening in the thin portion. Mauger does not disclose this limitation.

In Mauger, there is no opening, and thus, the substrate cannot be used as a deposition mask. It is clear that Mauger does not presume the use of the silicon substrate as a mask. In addition, Mauger fails to disclose or even suggest formation of an opening in the thin portion after the thin portion is formed, as required by the claims.

In order to form an opening forming region by reducing a thickness of a semiconductor substrate as described in the present invention, a long etching time is required. In the present invention, after an opening forming region is formed through a process that requires a long etching time, an opening is formed through the substrate in a predetermined position on the opening forming region. Thus, after an opening is formed, the opening that requires a high precision in the shape is not exposed to a process for reducing the thickness of the substrate, such as that applied in the opening forming region that requires a long time for etching. Mauger, which fails to disclose formation of an opening, cannot anticipate reducing the thickness of the substrate and then forming an opening, and thus it is clear that claim 6

cannot be anticipated by Mauger. Moreover, formation of a deposition mask through steps as in the present invention cannot be viewed as obvious from Mauger.

Thus, Mauger does not anticipate claim 6. In addition, because claims 7 and 8 include all of the limitations of claim 6, Mauger does not anticipate claims 7 and 8. Accordingly, Applicant respectfully requests that the rejection be withdrawn.

In addition claims 6-8 are also allowable over Staples. Staples discloses a use of silicon wafer as a stencil in a process that uses a molecular beam method. As described in Figure 1 (Figs. 1a-1g) and corresponding description (Col. 3), the manufacturing procedure of the stencil in Staples is (a) forming a groove on the front side of a wafer in a portion that will become an opening of a mask (Fig. 1d) and (b) then etching only a central region of the wafer from the back side of the wafer (Figs. 1e and 1f).

Staples, which discloses a use of a wafer as a stencil (mask), still fails to disclose or even suggest reducing the thickness of a substrate to form an opening forming region and then forming an opening, as described in claim 6 of the present invention. Thus, it is clear that it is not obvious for a person with ordinary skill in the art to first reduce the thickness of a substrate (or form a thick portion at least on a peripheral region of a mask) and then form an opening. In Staples, because the opening is formed first, the opening is exposed to a process for reducing the thickness of the substrate such as in the opening forming region that requires a long etching time, after the opening is formed, which results in an expansion of the size of the opening during the process for reducing the thickness of the substrate. Therefore, with the process of Staples, it is not possible to form an opening with a high precision as in the present invention. In addition, Staples does not recognize the necessity to employ the steps as described in the present invention.


In addition, Applicant has added claims 14-16. None of the citations discloses a thick peripheral portion of a mask, that the thickness is reduced in a region in which an opening is to be formed, that a thick portion is provided in a region between a plurality of opening formation regions, and that the mask is reinforced by the thick portion and the thick peripheral region of the mask. By providing a thick portion in the central region of the mask in addition to the peripheral region, it is possible to maintain the strength of the mask even when a large semiconductor mask substrate is used for a large medium, and, at the same time, to maintain a thin thickness for the opening forming region and a high positional precision of the opening. None of the citations discloses or even suggests such a mask and has no description of necessity of the mask. Accordingly, Applicant respectfully requests that claims 14-16 be allowed.

In view of the foregoing, it is respectfully submitted that the instant application is in condition for allowance. Accordingly, it is respectfully requested that this application be allowed and a Notice of Allowance issued. If the Examiner believes that a telephone conference with Applicant's attorneys would be advantageous to the disposition of this case, the Examiner is cordially requested to telephone the undersigned.

In the event the Commissioner of Patents and Trademarks deems additional fees to be due in connection with this application, Applicant's attorney hereby authorizes that such fee be charged to Deposit Account No. 06-1130.

Respectfully submitted,

CANTOR COLBURN LLP

By: 

Lisa A. Bongiovi

Registration No. 48,933

CANTOR COLBURN LLP

55 Griffin Road South

Bloomfield, CT 06002

Telephone (860) 286-2929

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Customer No. 23413

December 18, 2003

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant: TSUTOMU YAMADA )  
Serial No. 09/748,470 ) Group Art Unit: 2879  
Filed: December 26, 2000 ) Examiner: K. Ramsey  
For: DEPOSITION MASK AND MANUFACTURING )  
METHOD THEREOF, AND )  
ELECTROLUMINESCENCE DISPLAY AND )  
MANUFACTURING METHOD THEREOF )

LETTER TO EXAMINER

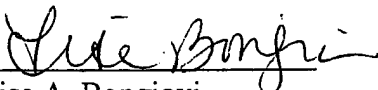
Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

Dear Sir:

For your information, this application is related to Application Serial No. 09/966,692, which was filed on September 28, 2001. Along with this letter, Applicant is filing an Information Disclosure Statement that lists all of the art currently cited in Application Serial No. 09/966,692. However, because the present application was filed before Application Serial No. 09/966,692, all of that art may not necessarily be prior art references.

Respectfully submitted,

CANTOR COLBURN LLP

By:   
Lisa A. Bongiovi  
Registration No. 48,933  
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55 Griffin Road South  
Bloomfield, CT 06002  
Telephone (860) 286-2929  
Facsimile (860) 286-0115  
Customer No. 23413

December 18, 2003

# INFORMATION DISCLOSURE STATEMENT

ATTY. DOCKET NUMBER YKI-0060 SERIAL NUMBER 09/748,470 FILED 12/26/2000  
 FIRST INVENTOR: T. Yamada TITLE DEPOSITION MASK AND MANUFACTURING  
METHOD THEREOF, AND ELECTROLUMINESCENCE DISPLAY AND MANUFACTURING  
METHOD THEREOF EXAMINER K. Ramsey ART UNIT 2879

1. ☒ Applicant submits herewith a copy of (a) attached form PTO-1449, which lists all patents, publications, applications, or other information submitted for consideration by the Office; (b) a legible copy of each document required by 37 C.F.R. §1.98(b)(2).
2. ☐ Applicant herein apprises the Patent Office of references cited in a parent U.S. application from which this application obtains the benefit of an earlier filing date under 35 U.S.C. §120. The Serial Number of the parent application is U.S. Application \_\_\_\_\_ filed \_\_\_\_\_ and entitled \_\_\_\_\_.  
 The publications cited therein are listed on attached Form PTO-1449. In accordance with 37 C.F.R. §1.98(d) copies of the listed publications are not required. ☐ Additional parent patent applications are listed on an attached sheet.
3. ☐ In accordance with 37 C.F.R. §1.98(a)(3), Applicant hereby certifies that for each reference not in English (check at least one box below):  
☐ A copy of a translation of one or more non-English document, or portion thereof, is provided herewith;  
☐ A concise explanation is (check at least one box below):  
☐ provided in the accompanying foreign or international search report; ☐ incorporated into the specification; and/or ☐ provided herewith.

## 37 C.F.R. §1.97(b)(1), (b)(2) – WITHIN 3 MONTHS OF FILING OR ENTRY IN NATIONAL STAGE

4. ☐ Since this Information Disclosure Statement is being filed within three months of the filing date of the subject application or within three months of the date of entry of the national stage as set forth in 37 C.F.R. §1.491 in an international application, no fee or certification under 37 C.F.R. §1.97(e) is required.

## 37 C.F.R. §1.97(b)(3), (b)(4) – PRIOR TO MAILING OF FIRST OFFICE ACTION OR FIRST ACTION AFTER REQUEST FOR CONTINUED EXAMINATION

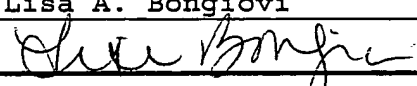
5. ☐ Since this Information Disclosure Statement is being filed before the mailing date of the first Office Action on the merits, or before the mailing of a first Office action after the filing of a request for continued examination under 37 C.F.R. §1.114, no fee or certification under 37 C.F.R. §1.97(e) is required.

## 37 C.F.R. §1.97(c) – AFTER FIRST ACTION, BEFORE FINAL ACTION OR ALLOWANCE


6. ☒ Since this Information Disclosure Statement is being filed outside of the period provided for in 37 C.F.R. §1.97(b), but before the mailing date of a Final Rejection or Notice of Allowance, this submission is being accompanied by (one of the following boxes must be checked):  
 a. ☒ the fee required under 37 C.F.R. §1.97(c)(2) and specified in 37 C.F.R. §1.17(p).  
 b. ☐ the statement specified in 37 C.F.R. §1.97(e) (Box 8 or 9 must be checked).

## 37 C.F.R. §1.97(d) – AFTER FINAL REJECTION OR ALLOWANCE

7. ☐ Since this Information Disclosure Statement is being filed after the period specified in 37 C.F.R. §1.97(c), but on or before payment of the issue fee and is accompanied by both the statement specified in 37 C.F.R. §1.97(e) and the fee set forth in 37 C.F.R. §1.17(p). (Box 8 or 9 must be checked.)
8. ☐ In accordance with 37 C.F.R. §1.97(e)(1), Applicant's attorney certifies that each item of information contained in this Information Disclosure Statement was first cited in any communication from a foreign patent office in a counterpart foreign application not more than three months prior to the filing of this Information Disclosure Statement. ☐ The foreign or international search report(s) is/are enclosed.
9. ☐ In accordance with 37 C.F.R. §1.97(e)(2), Applicant's attorney certifies that no item of information contained in this Information Disclosure Statement was cited in a communication from a foreign patent office in a counterpart foreign application, and, to the knowledge of the person signing this certification after making reasonable inquiry, no item of information contained in this Information Disclosure Statement was known to any individual designated in 37 C.F.R. §1.56(c) more than three months prior to the filing of the information disclosure statement.
10. ☒ In the event the Commissioner of Patents deems that any additional fee is required under 37 C.F.R. §§ 1.16 or 1.17 in connection with this application, Applicant's attorneys authorize that such fee be charged to Deposit Account No. 06-1130.
11. Consideration of this Information Disclosure Statement is respectfully requested.

Name:	Lisa A. Bongiovi	Registration Number	48,933
Signature		Date	December 18, 2003

CERTIFICATE OF MAILING OR TRANSMISSION: I hereby certify that this correspondence is being deposited with the United States Postal Service with sufficient postage as first class mail in an envelope addressed to: Commissioner For Patents, P.O. Box 1450, Alexandria, VA 22313-1450, or [ ] facsimile transmitted to the U.S. Patent and Trademark Office to Facsimile No. \_\_\_\_\_ on the date shown below.

Name:	Agatha Skierkowski	Date	December 18, 2003
Signature			



**INFORMATION DISCLOSURE CITATION**  
(Use several sheets if necessary)

Docket Number (Optional)  
**YKI-0060**

Application Number  
**09/748,470**

Applicant(s)  
**Yamada et al.**

Filing Date  
**December 26, 2000**

Group Art Unit  
**2879**

**U.S. PATENT DOCUMENTS**

*EXAMINER INITIAL	REF	DOCUMENT NUMBER	DATE	NAME	CLASS	SUBCLASS	FILING DATE IF APPROPRIATE
		5,641,611	6/24/1997	Shieh et al.	438	35	8/21/1995
		5,900,339	5/4/1999	Roberts et al.	430	7	11/21/1997
		6,087,274	7/11/2000	Tonucci et al.	438	758	3/3/1998
		6,165,543	12/26/2000	Otsuki et al.	427	66	6/14/1999
		US 6,214,631 B1	4/10/2001	Burrows et al.	438	22	10/30/1998
		US 6,255,775 B1	7/3/2001	Ikuko et al.	313	506	5/14/1998
		US 6,417,034 B2	7/9/2002	Kitazume et al.	438	160	4/30/2001
		US 6,459,193 B1	10/1/2002	Fukuzawa et al.	313	402	10/21/1999
		US 6,459,199 B1	10/1/2002	Kido et al.	313	504	5/14/1997
		US 2002/0009538 A1	1/24/2002	Arai	427	66	5/3/2001

**FOREIGN PATENT DOCUMENTS**

	REF	DOCUMENT NUMBER	DATE	COUNTRY	CLASS	SUBCLASS	Translation	
							YES	NO

**OTHER DOCUMENTS** (Including Author, Title, Date, Pertinent Pages, Etc.)

		Office Action for Application Serial No. 09/966,692, dated November 20, 2002.
		Office Action for Application Serial No. 09/966,692, dated June 24, 2003.

EXAMINER	DATE CONSIDERED
----------	-----------------

EXAMINER: Initial if citation considered, whether or not citation is in conformance with MPEP Section 609; Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

# **ATTACHMENT 2**





UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER OF PATENTS AND TRADEMARKS  
Washington, D.C. 20231  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/966,692	09/28/2001	Tsutomu Yamada	YKI-0078	4078

23413 7590 11/20/2002

CANTOR COLBURN, LLP  
55 GRIFFIN ROAD SOUTH  
BLOOMFIELD, CT 06002

RECEIVED  
NOV 2 2002

CANTOR COLBURN LLP

EXAMINER MULPURI, SA VITRI	
ART UNIT	PAPER NUMBER

2812

DATE MAILED: 11/20/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

DOCKETED	
Due:	February 20
Item:	response
Initials:	uwm
On:	11/25/02

# Office Action Summary

Application No.  
09/966,692

Applicant(s)  
Yamada et al

Examiner  
Savitri Mulpuri

Art Unit  
2812



-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136 (a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on Feb 1, 2002
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11; 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-26 is/are pending in the application.
- 4a) Of the above, claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1, 2, 4-8, 10-14, 16-22, and 24-26 is/are rejected.
- 7) ☒ Claim(s) 3, 9, 15, and 23 is/are objected to.
- 8) ☐ Claims \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.  
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

## Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☒ All b) ☐ Some\* c) ☐ None of:
- ☒ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \*See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).  
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

## Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s). \_\_\_\_\_ 6) ☐ Other:

Art Unit: 2812

### DETAILED ACTION

This action is in response to the applicant's submission of priority document filed on 2/11/02.

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-2, 4-8, 10-14, 16-22, , 24-26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Fukuzawa et al US 6,459,193 in combination with Tonucci et al US 6,087,274..

Fukuzawa et al teaches forming organic electroluminescent display by the following process steps: Providing a substrate for forming electroluminescent array; providing a shadow mask "220" with plurality of holes over the substrate having pixel "212"; providing electroluminescent material source "240" over the mask. Depositing the electroluminescent material on the substrate by laterally moving the mask each time of the exposure. Fukuzawa does not teach mask being semiconductor material and relative movement of the mask and the substrate.

Tonucci et al teaches depositing nanosize patterning process by providing silicon carbide substrate with plurality holes and depositing the material through holes with accuracy and precision by the relative movement of the mask and the substrate. Tonucci et al further disclose using the position technique for organic materials. (See col. 60-67, fig 2B -2C and 4 claims, 2,

**Notice of References Cited**Application/Control No.  
09/966,692Applicant(s)/Patent Under Reexam  
Yamada et alExaminer  
Savitri MulpuriArt Unit  
2812

Page 1 of 1

**U.S. PATENT DOCUMENTS**

	Document Number Country Code-Number-Kind Code	Date MM-YYYY <sup>1</sup>	Name	Classification <sup>2</sup>	
A	6,087,274	7/11/00	Tonucci et al	438	758
B	6,459,193	10/1/02	Fukuzawa et al	313	402
C	6,459,199	10/1/02	Kido et al	313	504
D	6,417,034	7/9/02	Kitazume et al	438	160
E	5,641,611	1/24/97	Sheih et al	438	----
F	5,900,339	5/4/99	Roberts et al	430	7
G	6,165,543	12/26/00	Otsuki et al	427	66
H	6,255,775	7/3/01	Ikuko et al	7/3/01	----
I					
J					
K					
L					
M					

**FOREIGN PATENT DOCUMENTS**

	Document Number Country Code-Number-Kind Code	Date MM-YYYY <sup>1</sup>	Country	Name	Classification <sup>2</sup>	
N						
O						
P						
Q						
R						
S						
T						

**NON-PATENT DOCUMENTS**

	Include, as applicable: Author, Title, Date, Publisher, Edition or Volume, Pertinent Pages
U	
V	
W	
X	

\* A copy of this reference is not being furnished with this Office action. See MPEP § 707.05(a).

<sup>1</sup> Dates in MM-YYYY format are publication dates.<sup>2</sup> Classifications may be U.S. or foreign.



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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/966,692	09/28/2001	Tsutomu Yamada	YKI-0078	4078

23413 7590 06/24/2003

CANTOR COLBURN, LLP  
55 GRIFFIN ROAD SOUTH  
BLOOMFIELD, CT 06002

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EXAMINER

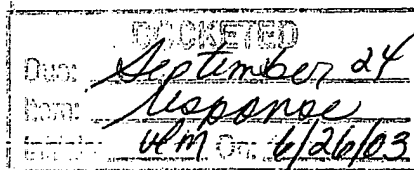
MULPURI, SAVITRI

ART UNIT PAPER NUMBER

2812

DATE MAILED: 06/24/2003

Please find below and/or attached an Office communication concerning this application or proceeding.



# Office Action Summary

Application No.  
09/966,692

Applicant(s)

Yamda et al

Examiner

First Last

Art Unit

1234

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136 (a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on Apr 17, 2003
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11; 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-26 is/are pending in the application.
- 4a) Of the above, claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-26 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claims \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.  
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

## Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All b) ☐ Some\* c) ☐ None of:  
1. ☐ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_  
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\*See the attached detailed Office action for a list of the certified copies not received.

- 14) ☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).  
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

## Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s). \_\_\_\_\_ 6) ☐ Other: \_\_\_\_\_

Art Unit:

## DETAILED ACTION

### *Claim Rejections - 35 USC § 102*

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless -

(e) the invention was described in-

(1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effect under this subsection of a national application published under section 122(b) only if the international application designating the United States was published under Article 21(2)(a) of such treaty in the English language; or

(2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that a patent shall not be deemed filed in the United States for the purposes of this subsection based on the filing of an international application filed under the treaty defined in section 351(a).

Claims 1-5, 7-26 are rejected under 35 U.S.C. 102(e) as being anticipated by Ikuko et al

(US 6255,775).

Ikuko et al discloses method of making electroluminescent display by the following process steps: Providing a substrate having anode "2" hole transporting layer "4, depositing electroluminescent material "7" over substrate by shadow mask with plurality openings "9" , from linearly extending source "11,12,13". Ikuko et al discloses denoting the distance between mask and substrate by " $d_1$ " and denoting distance between mask and emissive source is " $d_2$ " and also denoting pitch of the luminous elements is " $p$ " distance between emissive source is " $d_3$ ". Ikuko deduce the equation using four variable parameters  $d_1, d_2, d_3, p$  which means all the four parameters are dependent on one another. Ikuko disclose not moving the mask laterally as

Art Unit:

disclosed in the prior art (see 9 a- 9d) but longitudinal movement of mask is applied to adjust the distances  $d_1$ ,  $d_2$  and  $d_3$  and the pitch "p". Ikuko particularly teach linearly extending source 11,12,13 (see fig. 3 and fig 5 a-5c and related description).

*Claim Rejections - 35 USC § 103*

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claim 6 is rejected under 35 U.S.C. 103(a) as being unpatentable over Ikuko et al in combination with Tonucci et al.

Ikuko et al does not teach semiconductor as a shadow mask. Tonucci et al discloses a method of depositing a material by using silicon carbide semiconductor as a shadow mask with plurality of holes to deposit materials on the substrate with high accuracy and precision . It would have been obvious to one of ordinary skill in the art to use semiconductor mask with plurality of openings to deposit material over the substrate in the invention of Ikuko with high precision and accuracy.

Claims 1-5, 7-26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Fukuzawa et al in combination with Ikuko et al..



Art Unit:

Fukuzawa et al teaches forming organic electroluminescent display by the following process steps: Providing a substrate for forming electroluminescent array; providing a shadow mask "220" with plurality of holes over the substrate having pixel "212"; providing electroluminescent material source "240" over the mask. Depositing the electroluminescent material on the substrate by laterally moving the mask each time of the exposure. Fukuzawa does not teach mask being semiconductor material and relative movement of the mask and the substrate. Fukuzawa et al do not teach linearly extending source elongated in direction perpendicular to the relative movement of between said mask and material source.

Ikuko et al discloses method of making electroluminescent display by the following process steps: Providing a substrate having anode "2" hole transporting layer "4", depositing electroluminescent material "7" over substrate by shadow mask with plurality openings "9", from linearly extending source "11,12,13". Ikuko et al discloses denoting the distance between mask and substrate by " $d_1$ " and denoting distance between mask and emissive source is " $d_2$ " and also denoting pitch of the luminous elements is " $p$ " distance between emissive source is " $d_3$ ". Ikuko deduce the equation using four variable parameters  $d_1, d_2, d_3, p$  which means all the four parameters are dependent on one another. Ikuko discloses not moving the mask laterally as disclosed in the prior art (see 9 a- 9d) but longitudinal movement of mask is applied to adjust the distances  $d_1, d_2$  and  $d_3$  and the pitch " $p$ ". Ikuko particularly teaches linearly extending source 11,12,13 (see fig. 3 and fig 5 a-5c and related description). It would have been obvious to one of

Art Unit:

ordinary skill in the art to use linearly elongated mask of Ikuko in the invention of Fukuzawa to avoid the movement of the mask in lateral direction during each exposure of the material , which is difficult maintain positional accuracy of the luminous material and the wafers(see col.2, lines 20-35).

Claim 6 is rejected under 35 U.S.C. 103(a) as being unpatentable over Fukazawa in combination with Ikuko et al as applied to claims 1-5, 7-26 above, and further in view of Tonucci et al.

Fukuzawa et al does not teach forming semiconductor shadow mask. Tonucci et al teaches depositing nanosize patterning process by providing silicon carbide substrate with plurality holes and depositing the material through holes with accuracy and precision by the relative movement of the mask and the substrate. Tonucci et al further disclose using the position technique for organic materials. (See col. 60-67, fig 2B -2C and 4 claims, 2, 23, It would have been obvious to one of ordinary skill in the art to use silicon carbide mask with plurality of openings to deposit material over the substrate in the invention of Fukuzawa et al because of the advantage of depositing in large area substrate in small area in the order nanosize with accuracy and precision as taught by Tonucci et al.

Applicant's arguments with respect to claims 1-26 have been considered but are moot in view of the new ground(s) of rejection.

Art Unit:

Any inquiry concerning this communication or earlier communications from the examiner should be directed to S. Mulpuri whose telephone number is 305-5184. The fax phone number for the organization where this application or proceeding is assigned is 703-308-7722.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-305-0956.

**SAVITRI MULPURI  
PRIMARY EXAMINER**

<b>Notice of References Cited</b>	Application/Control No. <b>09/966,692</b>		Applicant(s)/Patent Under Reexam <b>Yamda et al</b>	
	Examiner <b>First Last</b>		Art Unit <b>1234</b>	Page 1 of 1

**U.S. PATENT DOCUMENTS**

	Document Number <small>Country Code-Number-Kind Code</small>	Date <small>MM-YYYY<sup>1</sup></small>	Name	Classification <sup>2</sup>	
A	8,214,631	4/2001	Burrows et al	----	----
B	2002/0009538	1/2002	Arai	----	----
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**NON-PATENT DOCUMENTS**

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<sup>1</sup> A copy of this reference is not being furnished with this Office action. See MPEP § 707.05(a).

<sup>1</sup> Dates in MM-YYYY format are publication dates.

<sup>2</sup> Classifications may be U.S. or foreign.

# CANTOR COLBURN LLP

VENDOR ID	PTO	NUMBER	38828	DATE	12/18/03
PAYEE	Commissioner of Patents and			MEMO	Account#
INVOICE NUMBER	INVOICE DATE	INVOICE AMOUNT	PREVIOUS PAY/CREDIT	DISCOUNT TAKEN	AMOUNT OF PAYMENT
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TOTAL					*****180.00

**CANTOR COLBURN LLP**  
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 BLOOMFIELD, CT 06002



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THE STAMP OF THE PATENT OFFICE, PLACED HEREON, ACKNOWLEDGES RECEIPT OF:

Attorney Docket: YKI-0060                      Date Mailed: 12/18/2003  
Applicant: Tsutomu Yamada et al.  
Serial Number: 09/748,470                      Date Filed: 12/26/2000  
For: DEPOSITION MASK AND MANUFACTURING METHOD  
THEREOF, AND ELECTROLUMINESCENCE DISPLAY AND  
MANUFACTURING METHOD THEREOF

\*\*\*\*\*  
Combined Amendment Transmittal and Petition for Extension of Time with  
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